II. CLAIM AMENDMENTS

1. (Currently Amended) A method of processing subband signals for cancelling an undesired effect on a signal, the method comprising steps of:

analysing a primary signal and a reference signal in a time domain each through an oversampled filterbank to produce frequency domain primary signals and frequency domain reference signals in a plurality of subbands, where the primary signal is a desired signal affected by an undesired signal, and the reference signal corresponds to the undesired signal;

processing the frequency domain primary signal and the frequency domain reference signal using an adaptive filter in the processing in each subband, comprising:

filtering at the adaptive filter the frequency domain reference signal in each subband;

adding the filtered frequency domain reference signal and the frequency domain primary signal in each subband to output a subband signal in each subband; and

operating on ~~at least~~ the frequency domain primary signal and the frequency domain reference signal in each subband to improve the convergence of the adaptive filter in each subband; and

synthesizing ~~the outputs of the adaptive processing~~ the subband signals with an oversampled synthesis filterbank to output a time domain signal in which the subband processing has cancelled the effect of the undesired signal,

the operating step including, in each subband:

whitening ~~the input of the adaptive filter~~ the frequency domain primary signal ~~by spectral emphasis; and~~

whitening the frequency domain reference signal; and

~~whitening the input of the adaptive filter by decimating the frequency-domain primary signal and frequency-domain reference signal by a factor which is less than or equal to an oversampling factor (OS); and~~

adjusting coefficients of the adaptive filter based on the whitened frequency domain primary signal and the whitened frequency domain reference signal.

2.-4. (Cancelled)

5. (Previously Presented) A method of claim 1, wherein the operating step includes the step of implementing the affine projection algorithm in each subband.

6. (Currently Amended) A method of claim 1, wherein the ~~operating~~ adjusting step ~~includes the step of~~ comprises, in each subband:

adding the output of the adaptive filter and the whitened frequency domain primary signal to output a first signal; and

implementing~~, in each subband,~~ the least mean square algorithm, the recursive least squares algorithm, or a combination thereof based on the first signal and the whitened frequency domain reference signal to adjust the coefficients of the adaptive filter.

7. (Original) A method of claim 1, wherein the operating step includes the step of employing a double-talk detector to control the adaptation process of the adaptive filter.

8. (Original) A method of claim 1, wherein the operating step includes the step of controlling the adaptation step size of the adaptive filter.

9. (Original) A method of claim 1, wherein the processing step includes the step of performing non-adaptive noise reduction for eliminating uncorrelated noise.

10. (Original) A method of claim 1, wherein the processing step includes the step of performing a cross talk resistant adaptive processing using two adaptive filters in each subband.

11. (Original) A method of claim 1, wherein the undesirable signal is an echo signal or a noise signal.

12. (Currently Amended) A system for processing subband signals for cancelling an undesired effect on a signal, the system comprising:

an oversampled analysis filterbank for analysing a primary signal and a reference signal in a time domain to produce frequency domain primary signals and frequency domain reference signals in a plurality of subbands, where the primary signal is a desired signal affected by an undesired signal, and the reference signal corresponds to the undesired signal;

a processing module for processing the frequency domain primary signals and the frequency domain reference signals, including:

an adaptive filter module in the processing in each subband, for filtering the frequency domain reference signal in the subband;

a first adder in each subband, for adding the filtered frequency domain reference signal and the frequency domain primary signal to output a subband signal in the subband; and

a module for operating on ~~at least~~ the frequency domain primary signal and the frequency domain reference signal in each subband to improve the convergence of each adaptive filter; and

an oversampled synthesis filterbank for synthesizing ~~the outputs of the processing module~~ the subband signals to output a time domain signal in which the subband processing has cancelled the effect of the undesired signal,

wherein the operating module includes:

means for whitening ~~the input of the adaptive filter~~ the frequency domain primary signal in each subband ~~by spectral emphasis~~; ~~and~~

means for whitening the frequency domain reference signal in each subband; and

~~means for whitening the input of the adaptive filter by decimating the input of the adaptive filter,~~

means for adjusting coefficients of the adaptive filter based on the whitened frequency domain primary signal and the whitened frequency domain reference signal, in each subband.

13. -15.(Cancelled)

16. (Original) The system according to claim 12, wherein the module implements affine projection algorithm in each subband.

17. (Previously Presented) The system according to claim 12, wherein the adjusting module comprises, in each subband:

a second adder for adding the output of the adaptive filter and the whitened frequency domain primary signal; and

means for ~~implements~~ implementing the least mean square algorithm, the recursive least squares algorithm, or a combination thereof ~~in each subband~~ based on the output from the second adder and the whitened frequency domain reference signal to adjust the coefficients of the adaptive filter.

18. (Original) The system according to claim 12, wherein the module includes a double-talk detector to control the adaptation process of the adaptive filter.

19. (Original) The system according to claim 12, wherein the module controls the adaptation step size of each adaptive filter.

20. (Original) The system according to claim 12, further comprising a non-adaptive noise reduction module for eliminating uncorrelated noise.

21.(Original) The system according to claim 12, wherein the processing module includes a cross talk resistant adaptive processing module having a pair of adaptive filters in each subband, which process the frequency domain primary signal and frequency domain reference signal.

22. (Original) The system according to claim 12, wherein the undesirable signal is an echo signal or a noise signal.

23. (Cancelled)

24. (Currently Amended) A method according to claim [[23]] 1, wherein the analysing step performs a weighted overlap-added (WOLA) analysis, and the synthesizing step performs a WOLA synthesis.

25. (Previously Presented) A method according to claim 24, wherein the analysing step includes the steps of:

performing WOLA analysis on the primary signal in a time domain to provide the frequency domain primary signals; and

performing WOLA analysis on the reference signal in the time domain to provide the frequency domain reference signals.

26-28. (Cancelled)

29. (Currently Amended) A system according to claim [[28]] 12, wherein the analysis filterbank includes a weighted overlap-added (WOLA) analysis filterbank, and the synthesis filterbank includes a WOLA synthesis filterbank.

30. (Previously Presented) A system according to claim 29, wherein the analysis filterbank includes:

a first WOLA analysis filterbank for providing the frequency domain primary signals; and

a second WOLA analysis filterbank for providing the frequency domain reference signals.

31-32. (Cancelled)

33. (New) A method according to claim 1, wherein the steps of whitening comprises:

whitening each of the frequency domain primary signal and the frequency domain reference signal by spectral emphasis.

34. (New) A method according to claim 1, wherein the steps of whitening comprises:

whitening each of the frequency domain primary signal and the frequency domain reference signal by decimating each of the frequency domain primary signal and the frequency domain reference signal by a factor which is less than or equal to an oversampling factor (OS).

35. (New) A system according to claim 12, wherein the means for whitening comprises:

means for whitening each of the frequency domain primary signal and the frequency domain reference signal by spectral emphasis.

36. (New) A system according to claim 12, wherein the means for whitening comprises:

means for whitening each of the frequency domain primary signal and the frequency domain reference signal by decimating each of the frequency domain primary signal and the frequency domain reference signal by a factor which is less than or equal to an oversampling factor (OS).